REMARKS

Claims 1-17 remain present in this application.

The specification has been amended. Reconsideration of the application, as amended, is respectfully requested.

Rejection under 35 USC 102(b)

Claims 1-17 stand rejected under 35 USC 102(b) as being anticipated by Cheng, U.S. Patent 5,197,858. This rejection is respectfully traversed.

Claim 1

Claim 1 of the present application recites a motor speed control device, applied to a fan, comprising a thermal sensor detecting an environmental temperature of the fan; a driving element driving the fan to a specific speed according to the detected temperature; and a control element connected electrically between the driving element and the thermal sensor for adjusting a first voltage of the thermal sensor to change a rotation speed and a temperature range of the fan.

It is respectfully submitted that Cheng does not teach, disclose or suggest "a control element for adjusting a first voltage of the thermal sensor to change a rotation speed and a temperature range of the fan," as can be found in independent claim 1 of the present application.

In Cheng, the Vth completely depends on the environment temperature, because the Rth resistor changes when the environmental temperature changes. In the invention, the control element adjusts a firs voltage of the thermal sensor. The first voltage depends not only on the

thermal sensor but also on the control element. The control element is capable of actively controlling the first voltage. One of ordinary skill in the art would understand that a voltage being controlled only by the thermal sensor, as can be found in Cheng, and a first voltage being controlled by the thermal sensor and the control element, as can be found in the present application, are completely different.

Accordingly, it is respectfully submitted that device of independent claim 1, as well as its dependent claims, is neither taught nor suggested by the prior art utilized by the Examiner.

Claim 14

Independent claim 14 of the present application recites a motor speed control device, applied to a fan, comprising a thermal sensor detecting an environmental temperature of the fan; a driving element driving the fan to a specific speed according to the detected temperature; and a control element connected electrically between the driving element and the thermal sensor for adjusting a first voltage of the thermal sensor, wherein the control element is a switch circuit, and a resistor of the switch circuit is electrically connected in parallel with the thermal sensor such that the first voltage rapidly decreases below a reference voltage of the driving element, reducing a temperature range of the fan to a full speed.

It is respectfully submitted that Cheng does not teach, disclose or suggest "a control element for adjusting a first voltage of the thermal sensor to change a rotation speed and temperature range of the fan," as can be found in independent claim 14 of the present application.

In Cheng, the Vth completely depends on the environment temperature, because the Rth resistor changes when the environmental temperature changes. In the present application, the control element adjusts a firs voltage of the thermal sensor. The first voltage depends not only on the thermal sensor but also on the control element. The control element is capable of actively controlling the first voltage. One of ordinary skill in the art would understand that a voltage being controlled only by the thermal sensor, as can be found in Cheng, and a first voltage being controlled by the thermal sensor and the control element, as can be found in the present application, are completely different.

It is also noted that Cheng does not teach, disclose, or suggest that "the first voltage rapidly decreases below a reference voltage of the driving element, reducing a temperature range of the fan to a full speed," as can also be found in independent claim 14.

In the present application, because a resistor of the switch circuit is electrically connected in parallel with the thermal sensor, the first voltage can rapidly decrease. In Cheng, the Vth is completely based on the thermal sensor. Thus, Cheng does not teach using the parallel resistor to decrease the first voltage rapidly.

Accordingly, it is respectfully submitted that device of independent claim 14 is neither taught nor suggested by the prior art utilized by the Examiner.

Claim 15

Independent claim 15 recites a motor speed control device, applied to a fan, comprising a thermal sensor detecting an environmental temperature of the fan; a driving element driving the fan to a specific speed according to the detected temperature; and a control element connected

electrically between the driving element and the thermal sensor for adjusting a first voltage of the thermal sensor, wherein the control element is a resistor electrically connected in serial with the thermal sensor for controlling a temperature range of the fan to a full speed by adjusting a resistance of the resistor and reducing a variation of the first voltage.

It is respectfully submitted that Cheng does not teach, disclose, or suggest "a control element for adjusting a first voltage of the thermal sensor to change a rotation speed and a temperature range of the fan."

In Cheng, the Vth completely depends on the environment temperature, because the Rth resistor changes when the environmental temperature changes. In the present application, the control element adjusts a firs voltage of the thermal sensor. The first voltage depends not only on the thermal sensor but also on the control element. The control element is capable of actively controlling the first voltage. One of ordinary skill in the art would understand that a voltage being controlled only by the thermal sensor, as can be found in Cheng, and a first voltage being controlled by the thermal sensor and the control element, as can be found in the present application, are completely different.

It is also noted that Cheng does not teach, disclose or suggest "a resistor electrically connected in serial with the thermal sensor for controlling a temperature range of the fan to a full speed by adjusting a resistance of the resistor and reducing a variation of the first voltage," as can also be found in independent claim 15.

In Fig. 2 of Cheng, the resistor (R4) connects electrically between the thermal sensor and ground, but does not connect electrically between the driving element and he thermal sensor.

Cheng therefore fails to teach or suggest a resistor connected electrically between the driving element and the thermal sensor.

In addition, adjusting the resistor (R4) in Fig. 2 of Cheng only changes the Vth voltage level but cannot reduce a variation of the first voltage. Cheng therefore fails to teach or suggest a resistor electrically connected in serial with the thermal sensor and reducing a variation of the first voltage.

Accordingly, it is respectfully submitted that device of independent claim 15 is neither taught nor suggested by the prior art utilized by the Examiner.

Claim 16

Independent claim 16 recites a motor speed control device, applied to a fan, comprising a thermal sensor detecting an environmental temperature of the fan; a driving element driving the fan to a specific speed according to the detected temperature; and a control element connected electrically between the driving element and the thermal sensor for adjusting a first voltage of the thermal sensor, wherein the control element is a subtraction circuit, and three resistors of the subtraction circuit generate a second voltage to adjust the first voltage to reduce a temperature range of the fan to a full speed.

It is respectfully submitted that Cheng does not teach, disclose, or suggest "a control element for adjusting a first voltage of the thermal sensor to change a rotation speed and a temperature range of the fan."

In Cheng, the Vth completely depends on the environment temperature, because the Rth resistor changes when the environmental temperature changes. In the present application, the

control element adjusts a firs voltage of the thermal sensor. The first voltage depends not only on the thermal sensor but also on the control element. The control element is capable of actively controlling the first voltage. One of ordinary skill in the art would understand that a voltage being controlled only by the thermal sensor, as can be found in Cheng, and a first voltage being controlled by the thermal sensor and the control element, as can be found in the present application, are completely different.

It is also noted that Cheng does not teach, disclose or suggest "the control element is a subtraction circuit, and three resistors of the subtraction circuit generate a second voltage to adjust the first voltage to reduce a temperature range of the fan to a full speed," as can also be found in independent claim 16.

In Fig. 2 of Cheng, the three resistors R4, R9 and R10 cannot generate a second voltage to adjust the first voltage to reduce a temperature range of the fan to a full speed. It is noted that the resistors R9 and R10 are connected in serial, and resistor R4 is connected to resistor R9 through resistor Rth, and not to the connection point of resistors R9 and R10. Thus, the voltage generated by resistors R4, R9 and R10 is at the node between the diode D1 and resistor R2. However, voltage level at the node between diode D1 and resistor R2 is a voltage independent of the resistance of resistors R4, R9 and R10, and not generated by the resistors R4, R9 and R10.

Accordingly, it is respectfully submitted that device of independent claim 16 is neither taught nor suggested by the prior art utilized by the Examiner.

Claim 17

Independent claim 17 recites a motor speed control device, applied to a fan, comprising a thermal sensor detecting an environmental temperature of the fan; a driving element driving the fan to a specific speed according to the detected temperature; and a control element connected electrically between the driving element and the thermal sensor for adjusting a first voltage of the thermal sensor, wherein when the first voltage exceeds a reference voltage of the driving element, the control element outputs a voltage equal to the reference voltage to be input to the driving element so as to keep the fan at a relatively low speed, and when the first voltage is smaller than the reference voltage of the driving element, the voltage input to the driving element is divided by N through the control element to quickly increase the fan to a full speed, wherein N is a natural number.

It is respectfully submitted that Cheng does not teach, disclose, or suggest "a control element for adjusting a first voltage of the thermal sensor to change a rotation speed and a temperature range of the fan."

In Cheng, the Vth completely depends on the environment temperature, because the Rth resistor changes when the environmental temperature changes. In the present application, the control element adjusts a firs voltage of the thermal sensor. The first voltage depends not only on the thermal sensor but also on the control element. The control element is capable of actively controlling the first voltage. One of ordinary skill in the art would understand that a voltage being controlled only by the thermal sensor, as can be found in Cheng, and a first voltage being controlled by the thermal sensor and the control element, as can be found in the present application, are completely different.

It is also noted that Cheng does not teach, disclose or suggest "wherein when the first voltage exceeds a reference voltage of the driving element, the control element outputs a voltage equal to the reference voltage to be input to the driving element so as to keep the fan at a relatively low speed, and when the first voltage is smaller than the reference voltage of the driving element, the voltage input to the driving element is divided by N through the control element to quickly increase the fan to a full speed, wherein N is a natural number."

Accordingly, it is respectfully submitted that device of independent claim 17 is neither taught nor suggested by the prior art utilized by the Examiner.

In view of the foregoing remarks, it is respectfully submitted that the method of independent claims 1 and 14-17, as well as their dependent claims, are neither taught nor suggested by the prior art utilized by the Examiner. Reconsideration and withdrawal of the 35 USC 102(b) rejection are respectfully requested.

Conclusion

Favorable reconsideration and an early Notice of Allowance are earnestly solicited.

Because the additional prior art cited by the Examiner has been included merely to show the state of the prior art and has not been utilized to reject the claims, no further comments concerning these documents are considered necessary at this time.

In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), the Applicants respectfully petition for a one (1) month extension of time for filing a response in connection with the present application and the required fee of $120.00 is attached herewith.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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